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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/627,190	07/27/2000	Srihari Adireddy	US 000064	1208

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EXAMINER	
WILLIAMS, LAWRENCE B	
ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/627,190	ADIREDDY ET AL.	
	Examiner	Art Unit	
	Lawrence B Williams	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,9,10,17 and 21* is/are rejected.

7)☒ Claim(s) *3-8,11-16 and 18-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 July 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Examiner suggests applicant replace the word "that" with than in line 14 of page 33.

Appropriate correction is required.

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claim 17 is objected to because of the following informalities: Examiner suggests applicant insert "in" between "use" and "a" in line 1. Appropriate correction is required.

Response to Arguments

4. Applicant's arguments with respect to claims 1- 20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1 and 21 are rejected under 35 U.S.C. 102(a) as being anticipated by Riazi et al. (US Patent 6,580,705 B1).

(1) With regard to claim 1, Riazi et al. discloses in Fig. 1, a transmitter for transmitting a stream of known symbols and unknown symbols through a transmission channel to a first receiver that receives the transmitted stream of known symbols and unknown symbols distorted by intersymbol interference (1SI) and reduces therein an ISI signal (abstract), wherein the transmitter comprises: a known symbol distribution controller (165) capable of inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in order to improve the performance of the first receiver (claims 1 and 11).

(2) With regard to claim 21, Riazi et al. also discloses wherein the known symbol distribution controller is capable of inserting the plurality of known symbol clusters into a plurality of positions in the outgoing stream of unknown symbols (col. 3, lines 50-57).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Riazi et al. (US

Patent 6,580,705 B1) as applied to claim 1 above, and further in view of Chan et al. (US Patent 5,127,051).

As noted above, Riazi et al. discloses all limitations of claim 1. Riazi et al. does not disclose wherein the known symbol distribution controller is capable of determining a channel order, L, associated with the receiver.

However, Chan et al. teaches the number of symbols chosen for a training block dependent upon the channel characteristics (col. 8, lines 48-53).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Chan et al. to modify the invention of Riazi et al. as a known method of minimizing the effect of noise and interference on a channel measurement (col. 8, lines 53-57).

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Duxbury (US Patent 6,289,063 B1) in view of Riazi et al. (US Patent 6,580,705 B1).

Duxbury discloses in Fig. 1, a network comprising: a plurality of receivers (100), each of said receivers capable of receiving from a transmission channel an incoming stream of known symbols and unknown symbols distorted by intersymbol interference (lSI), wherein each of said receivers comprises a block decision feedback equalizer (107, A, B) capable of receiving the transmitted stream of known symbols and unknown symbols distorted by intersymbol interference (1SI) and reducing therein an ISI signal (col. 2, lines 5-16; col. 3, lines 45-51); and a transmitter (Fig. 1, 50) for transmitting a stream of known symbols and unknown symbols through a transmission channel to a first receiver.

Duxbury et al. does not disclose wherein the transmitter comprises a known symbol distribution controller capable of inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in order to improve the performance of a first receiver.

However, Riazi et al. discloses in Fig. 1, a transmitter for transmitting a stream of known symbols and unknown symbols through a transmission channel to a first receiver that receives the transmitted stream of known symbols and unknown symbols distorted by intersymbol interference (1SI) and reduces therein an ISI signal (abstract), wherein the transmitter comprises: a known symbol distribution controller (165) capable of inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in order to improve the performance of the first receiver (claims 1 and 11).

One skilled in the art would have clearly recognized that a transmitter comprising: a known symbol distribution controller capable of inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in order to improve the performance of the first receiver is a well-known technique introduced in many references. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Riazi et al. to modify the invention of Duxbury as a method of improving the quality of services for wireless transmission and reception systems (col. 1, lines 50-56).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Duxbury (US

Patent 6,289,063 B1) in combination with Riazi et al. (US Patent 6,580,705 B1) and further in view of Riazi et al. (US Patent 6,580,705 B1).

As noted above, Duxbury in combination with Riazi et al. disclose all limitations of claim 10. They do not however disclose wherein the known symbol distribution controller is capable of determining a channel order, L, associated with the receiver.

However, Chan et al. teaches the number of symbols chosen for a training block dependent upon the channel characteristics (col. 8, lines 48-53).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Chan et al. to modify the invention of Riazi et al. as a known method of minimizing the effect of noise and interference on a channel measurement (col. 8, lines 53-57).

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Duxbury (US Patent 6,289,063 B1) in view of Riazi et al. (US Patent 6,580,705 B1).

Duxbury discloses in Fig. 1, for use in a network comprising a transmitter and a plurality of receivers (100), wherein each receivers receives from a transmission channel an incoming stream of known symbols and unknown symbols distorted by intersymbol interference (ISI), and wherein each receiver comprises a block decision feedback equalizer (107, A, B) capable of receiving the transmitted stream of known symbols and unknown symbols distorted by intersymbol interference (1SI) and reducing therein an ISI signal and a method of transmitting a stream of known symbols and unknown symbols through a transmission channel to a first receiver (col. 2, lines 5-16; col. 3, lines 45-51).

Duxbury et al. does not disclose wherein the method of transmitting comprises inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in order to improve the performance of a first one of receivers and transmitting the stream of known symbols and unknown symbols according to the optimum distribution.

However, Riazi et al. discloses inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in order to improve the performance of a first one of receivers and transmitting the stream of known symbols and unknown symbols according to the optimum distribution (col. 3, lines 50-57).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Riazi et al. to modify the invention of Duxbury as a method of improving the quality of services for wireless transmission and reception systems (col. 1, lines 50-56).

Allowable Subject Matter

8. Claims 3-8, 11-16, and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a transmitter for transmitting a stream of known symbols and unknown symbols through a transmission channel. Prior art records fail to teach a transmitter

"wherein said known symbol distribution controller determines the optimum distribution according to a value of the channel order as taught in claims 3, 11 and 18.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Wright et al. discloses in US Patent 6,466,569 B1 Uplink Transmission and Reception Techniques For Processing Satelliteation Satellite.

b.) Kanterakis et al. discloses in US Patent 6,169,759, B1 Common Packet Channel.

c.) Azenkot et al. discloses in US Patent 6,791,995 B1 a Multichannel Multimode Docus Headend Receiver.

d.) Kolze et al. discloses in US Patent 6,285,681 B1 a Variable Length Burst Transmission Over The Physical Layer of a MultiLayer Transmission Format.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw
October 27, 2004

AMANDA T. LE
PRIMARY EXAMINER